REMARKS

Claims 1-9 and 14 are all the claims pending in the application.

In the Final Office Action, the Examiner rejects claims 1, 3, 5, 7, 9 and 14 under 35 U.S.C. § 102(e) as allegedly being anticipated by Kunze et al. (U.S. Patent No. 6,879593, hereinafter "Kunze")[1], rejects claims 2 and 6 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kunze in view of Wootton et al. (U.S. Patent No. 6,128,298, hereinafter "Wootton"), and rejects claims 4 and 8 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kunze in view of Chitturi (U.S. Patent No. 6,760,780).

The outstanding rejections are traversed, as discussed in detail below.

Claim Rejections - 35 U.S.C. § 102

With respect to the rejection of claims 1, 3, 5, 7, 9, and 14 under 35 U.S.C. § 102(e) as allegedly being anticipated by Kunze, Applicant respectfully traverses and submits that Kunze fails to disclose all the claimed features. As discussed below, the Examiner is both mischaracterizing the actual disclosure of Kunze and has not properly responded to the substance of Applicant's arguments set forth in the Amendment of June 15, 2006.

For instance, in traversing the rejection of independent claim 1, Applicant previously noted that Kunze fails to teach any conversion of a ***new port value*** to the original port number

[1] Page 2 of the Office Action incorrectly indicates that claims 1, 3, 5, 7, 9, and 10-16 are rejected ender 35 U.S.C. § 102(e). However, claims 10-13 and 15-16 were previously cancelled without prejudice or disclaimer.

(i.e., internal port value), which is different from the allocated first external port value, as claimed. *See* Amendment at pages 9-10. In the Response, the Examiner asserts as follows:

> "Applicant submits that the first external port value to the specific node is different from the internal port value of the specific node of the private network. Examiner thus relies on the teaching of figure 3 which shows the external port value (public network port number 1626 [*sic*]) be different from the internal port value (private network port number 1246 of figure 3)."

See Office Action at page 8.

However, the issue is not simply whether a public port number is mapped to a different private port number of an internal network node, as the Examiner apparently contends. Rather, claim 1 recites that the first external port value that is allocated to the specific node in response to receiving the access reservation demand from the external node is a new port value and the new port value is allocated when the access reservation demand is received.

Kunze, by contrast, merely shows a socket map in which a public port number can be mapped to a private port number having a different value, but does not suggest that the public port number, which is also a new value, is allocated to the private port number when an access reservation demand is received. In this regard, Applicant notes that with respect to the example of the socket map shown in Figure 3, Kunze states:

> "In the first example entry shown in FIG. 3; the public network 1095 in the gateway 10 is mapped to port 1095 on the private network node having address 10.0.0.3. The second entry indicates that the public network port 2743 on the gateway 10 is

> mapped to port 2743 on the private network node having the address 10.0.0.4. The third entry indicates that the public network port 1627 on the gateway 10 is mapped to port 1246 on the private network node having address 10.0.0.8."

See Kunze at col. 3, lines 20-28.

Thus, Figure 3, and the related portion of Kunze associated therewith, simply illustrate that a public port number can be mapped either to the same or to a different internal (i.e., private) port number. In other words, a particular port number may identify an internal node having an internal IP address, in which the port value is the same as the port value transmitted as the destination address from the external node (e.g., port number 1095 and 2743). Conversely, an external port value may be mapped to a different internal port value of an internal network node, such as in the case of the internal node 10.0.0.8 and port 1246

The mere fact of an external port value mapped to a different internal value, taken out of context, is of little significance without further explanation as to how the allocation itself occurs. For instance, in conventional network address port translation (NAPT), as discussed by Kunze, connection requests originating from public network nodes can be processed by a gateway "only if one of the gateway's public network sockets have been *previously mapped* to a socket on one of the private network nodes." *See* Kunze at col. 1, lines 37-42.

Moreover, the remaining disclosure of Kunze contradicts, rather than supports the Examiner's contention. As discussed in the previous Amendment, Kunze relates to a method for establishing a network connection between public and private nodes in which connection requests from a public node that are received by a gateway connecting the public node to private

nodes do not require previous mapping of a socket to a particular private network socket. *See* Kunze at col. 1, lines 55-62 and col. 2, lines 7-19.

However, the connection method of Kunze cannot correspond to the allocation of the first external port value in response to receiving an access reservation demand, as claimed. For instance, Kunze teaches that when a network packet is received on one of the public network sockets of the gateway, "gateway 10 checks the socket map 100 to determine whether the socket map on which the packet was received is currently mapped to a particular private network node socket (step 500)." *See* Kunze at col. 3, lines 29-34. If previously mapped, then the packet is simply forwarded, and no further processing is performed. *See* Kunze at col. 3, lines 34-36.

Conversely, if a packet is received at the gateway of Kunze specifying a destination port value that is not mapped, Kunze teaches that the packet is simply forwarded to all the private nodes, or at least a subset of all the private nodes, that have the same port number value. *See* Kunze at col. 49-60. Thus, Kunze relies upon the assumption that a internal network node will have an application program running with an active port open that is identical to the port value received by the gateway, and that "[o]nly those nodes on which the application is running will respond to requests on those ports." *See* Kunze at col. 3, lines 65-67.

Kunze then teaches that the gateway waits for one of the internal network nodes to respond. In the event that no response is received from any of the internal nodes, then Kunze simply terminates processing. *See* Kunze at col. 4, lines 18-19. If, however, a response is received from one of the internal nodes, then Kunze teaches only that the IP address is modified,

and mentions nothing whatsoever about any modification of the port value. To wit, Kunze states:

> "If a response is received from a socket on one of the private network nodes, that response is modified to appear as if it had originated at the gateway (***by changing the 'source' address to the gateway's public IP network socket on which the request was originally received***) and then forwarded to the public network socket from which the connection request was received (step 560)."

See Kunze at col. 4, lines 19-25 (emphasis added).

Following transmission of the modified packet to the external node, the gateway waits for a confirmation packet from the external node, and, if received, Kunze teaches that:

> "...an entry is established in the socket map mapping the gateway's public network socket ***on which the original request packet was received*** to the private network from which the response packet was received."

See Kunze at col. 4, lines 34-38 (emphasis added).

To summarize, in the gateway of Kunze, if a packet is received and there is no existing entry in the socket map for the port value specified by the destination address, then the packet is forwarded to all, or some subset, of the private nodes behind the gateway. The gateway then waits for a response from an internal node executing an application associated with the particular port value. If a response is received from an internal node, then only the source IP address is modified by the gateway prior to transmission to the external node.

Thus, the socket number would ***not have changed***, as Kunze relies upon the identity of the port number being the same for both the external node and the internal node that is executing an application, which facilitates the response from the internal node in an application specific manner. Moreover, Kunze teaches that the entry is established on the ***same socket*** on which the original request was received (i.e., gateway IP address and port value of original request).

Also, as pointed out in the previous Amendment, even when Kunze teaches that a port number is reassigned, Kunze clearly teaches that the socket and associated port number are ***closed***, and therefore would not be converted to the original "internal port value", as claimed. In this regard, Kunze teaches that initial communications may be established on a first "well-known" port (e.g., a port associated with the SMTP protocol) and then switched to another port for bulk transfer. *See* Kunze at col. 4, lines 55-58. However, Kunze teaches that the node that accepted the transmission transmits a new socket identifier, and then ***closes the original connection*** and listens on the newly identified socket for a new connection request. *See* Kunze at col. 4, lines 58-63. Thus, even where the port number is changed, Kunze fails to suggest conversion of the new port value to the internal port value, as defined by claim 1.

As evidenced by the foregoing, the Examiner is misinterpreting the disclosure of Kunze because Kunze does not suggest any allocation of a first external port value to the specific node, which is different from the internal port value of the specific node of the private network, in response to receiving the access reservation demand from the external node. Rather, as noted above, the port value would not change if a packet were received for which there were no preexisting entry in the mapping table.

Further, even when Kunze does suggest that port values are changed in the case of changing port values after connection is established (i.e., to switch protocols), the original connection is closed, thus Kunze could not suggest the feature of the address conversion unit receives a response packet from the external node that includes the new port value and converts the new port value to the internal port value such that the response packet is transmitted to the specific node with the internal port value, as claimed.

Rather, the Examiner has simply pointed to a socket map showing a different port value for one of the entries, which, taken in context of Kunze's disclosure, suggests only conventional NAPT, which clearly cannot correspond to the claimed network conversion system.

Further, as demonstrated by the above discussion, the disclosure of Kunze does not support the contention that any conversion of port values occurs in the case of packet containing an unrecognized connection request. Indeed, as pointed out above, Kunze teaches the converse of what the Examiner alleges (i.e., the port values would be identical due to the assumption that an application would be executing and respond to a packet having a port value identical to that of the application). Thus, the different port values of the third entry of the socket map have been taken completely out of context by the Examiner, without properly considering the actual disclosure of the reference.

The Examiner's remaining remarks further evidence the misinterpretation of the disclosure of Kunze. For instance, the Examiner states:

> "Examiner posits it is not unreasonable to interpret the connection establishment as taught by Kunze to include these

> limitations as discussed by claim 1. Kunze discloses of entering an entry in the socket map thus correlating to allocating a new port value. Kunze further discloses that only when there is a connection request packet (access reservation demand) that a new connection may be established (figure 4), thus correlating to new port value is allocated when the access reservation demand is received."

See Office Action at page 8.

The Examiner's conclusion is unfounded, as the Examiner has pointed to no portion of the disclosure to explain how the entry is allocated. The disclosure of Kunze, for reasons set forth above, clearly teaches the converse of what the Examiner alleges. The table entry itself merely shows that an external port value could be mapped to a different internal port value. This was known, of course, from conventional NAPT, and the fact of the table entry itself suggests nothing about the manner in which the entry was created.

Accordingly, as Kunze fails to disclose all the features of claim 1, reconsideration and withdrawal of the rejection is requested. With respect to independent claims 5 and 9, which respectively define a network address conversion method and a recording medium for executing the method on a computer reciting analogous features which are likewise not disclosed by Kunze, Applicant submits that these claims should be allowable at least for reasons analogous to claim 1.

As to dependent claims 2-4, 6-8, 9, and 14, Applicant submits that these claims are allowable at least by virtue of their dependency as well as by virtue of the respective features recited therein.

Claim Rejections - 35 U.S.C. § 103

Claims 2 and 6 - Kunze in view of Wootton

With respect to the rejection of claims 2 and 6 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kunze in view of Wootton, Applicant traverses and submits that claims 2 and 6 are allowable at least by virtue of their dependency and by virtue of the features receited therein.

Claims 4 and 8 - Kunze in view of Chitturi

With respect to the rejection of claims 4 and 8 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kunze in view of Chitturi, Applicant traverses and submits that claims 4 and 8 are allowable at least by virtue of their dependency and by virtue of the features recited therein.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

As the due date for filing the present Response fell on a federal holiday, this Response is timely filed on November 24, 2006.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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